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PUBLIC HEALTH REPORTS.

[Reports to the Surgeon-General, Public Health and Marine-Hospital Service.]

Sanitary report of Panama and vicinity.

By CLAUDE C. PIERCE,

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[Detailed by order of the President under Act of Congress, approved February 15, 1893, for duty in the office of the United States consul-general at Panama.]

When Old Panama was destroyed by the buccaneer Morgan, in 1671, the survivors of that ill-fated city selected as the site for their new capital the peninsula upon which the modern Panama is located.

The area of this point of land, which juts out into Panama Bay, is about 250 acres, and when the city was established a sea wall was built on all sides exposed to the sea. A moat and wall were constructed across the base of the peninsula, and thus an artificial island was formed which could easily be protected from invasion.

The limited area of this "walled city" caused great overcrowding of buildings, and consequently the streets are very narrow and crooked. The sidewalks are not made to a grade, and are barely wide enough in most streets for two persons abreast. Another result of this crowding was to limit the size of the patios, or interior courts, of the houses and to keep the business and residence sections together—stores, shops, and servants' quarters being located on the ground floor and the residences above.

As the town increased in size and the necessity for protection lessened, the moat and wall across the base of the peninsula were destroyed and now but few remains of these old fortifications exist, houses having been built upon the site of the old wall in most places. Old citizens, however, still refer to the area beyond the location of this ancient boundary as "outside." The area of the town as it is at present is as follows:

Total area of Panama City	acres ..	674½
Area of old section	do ..	250
Total area of streets	do ..	39
Covered by structures and yards	do ..	591
Area of squares and parks	do ..	2½
Space unoccupied by buildings	do ..	42
Average width of streets	feet ..	35

The buildings of the old section of the town are constructed of large bricks, irregularly shaped stones, coral, and a porous stone taken from the beach. Such walls are thick and always damp during the wet season, due to the salt in the material. In the newer or "outside" part of the town the majority of the buildings are wooden shacks.

None of these houses are connected with sewers and few have proper privies, consequently the surroundings are extremely filthy and unsanitary.

At the present time the estimated population of Panama is 18,000, composed of 20 per cent Jamaica negroes, 40 per cent native negroes, 5 per cent Chinese; the other 35 per cent being the white natives and foreigners who came to Panama during the French canal work.

The temperature is about the same the entire year, the thermometer registering from 80° F. to 90° F. during the daytime. There are but two seasons, the wet and dry. The dry season lasts through January, February, March, and April, and is called summer. During the other eight months of the year rain falls every day. During the dry season a breeze blows most of the time from the north, making it very dusty, but cool at night. The streets will probably be sprinkled with salt water during the present dry season to allay the dust. In the wet season there is not much wind, but the moisture keeps the night cool.

MOSQUITOES.

Both *Stegomyia fasciata* and *Anopheles* are well distributed throughout the town. *Aedes* and several varieties of *Culex* are also found. The water tanks and barrels in the patios are especially adapted for the breeding of *Stegomyia*. The number of mosquitoes found is remarkably small considering the very favorable conditions that exist for their propagation. During January of this year in the old part of Panama they have rarely been troublesome, although they can always be found in the rooms of any house. Natives say there are fewer mosquitoes in the wet season than in the dry, which seems anomalous, but may possibly be explained by the fact that during the rainy season the collections of water are greatly agitated each day by the rainfall and containers are being constantly overflowed. The larvæ are thus killed.

Mosquitoes being comparatively so few in number are really more dangerous than they would be if present in great numbers, as mosquito nets are not considered necessary by the natives and most foreigners.

PREVAILING DISEASES.

Leprosy exists in the city of Panama, in the villages along the line of the Panama Railroad to Colon, and in the rural districts. There are 22 known cases in Panama City. There is a collection of shacks, known as a lazaretto, on the outskirts of Panama where lepers may go if they choose to and be supported by charity, but as they are not compelled to be isolated cases can be found in nearly any part of the city. At the present time there are 7 men and 2 women in the lazaretto.

Beri-beri is very common in the Republic of Panama, especially since 1897. During that year, and since then, it could be considered as epidemic along the canal route and in the city of Panama. There are now at least 30 cases in the French hospital in Panama and the city hospital of San Tomas, and many other cases are scattered throughout the town. Not only Chinamen and Negroes are affected, but some white men who have lived under apparently better conditions than are usually associated with this disease.

February 19, 1904

Smallpox has been epidemic throughout the Republic until recently. Now but few cases exist except in the interior villages. A general free vaccination has bettered the condition.

Tuberculosis, dysentery, pernicious malaria, and elephantiasis are always present. Yellow fever is endemic, only the presence of non-immunes being necessary for an epidemic, unless the proper precautions are taken.

VITAL STATISTICS.

As in all Spanish towns, the mayor keeps the records of the deaths, births, and marriages—that is, keeps those that are reported.

Since the formation of the new Republic an inspector-general of public health has been appointed, who will require these records to come to his office, and who will inaugurate sanitary improvements.

Burials have been made without certificates from regular physicians, the statement of a policeman, fireman, or some such person being sufficient.

Diagnoses are made and entered upon the official lists which are, to say the least, not accurate. Such causes as fever, hemorrhage, dropsy, liver disease, unknown, old age, natural causes, colic, etc., are very common.

A law has just been promulgated requiring physicians and druggists to report cases of contagious diseases, or "those diseases that can cause an epidemic." Conviction of failure to comply with this law will subject the delinquent to suspension from his profession for from three to six months.

During January, 1904, there were from all causes, in Panama city, 92 deaths, giving an annual rate of 61.33 upon the estimated population of 18,000.

SEWER SYSTEM.

The early settlers of Panama constructed of stone some underground channels for carrying off the storm water. These later were utilized as sewers by connecting laterals, also constructed of stone and of a square shape, with the largest of these subterranean conduits.

In those streets that did not have these conduits, property owners have built stone sewers to the beach or to the nearest conduit, selecting the shortest route. As a result of this nearly all the houses in the old part of the city are connected with such sewers. The construction of these underground channels is poor, allowing both the liquids and gases to escape into the surrounding soil. Traps or modern water-closets are found in but a few of the best houses.

During the dry season when no water can be obtained for flushing, these drains are practically filled with a putrid, stagnant, fecal mass.

The houses in the newer part of the town, being farther from the beach and not accessible to the old drains, are unprovided with any form of sewers. Some have cesspools; others privies, the location of which is changed when necessity compels. Most of the people in this section use dry-earth closets or simply pails, which are taken to the beach at night and emptied when they are filled to their utmost capacity. Until they are filled the pails are kept in the house.

WATER SUPPLY.

No water system whatever exists. Rain water from the roof during the rainy season, eight months of the year, gives an abundant supply to those houses that have adequate tank capacity and are well guttered.

During the dry season and for the entire year for those houses that are not supplied with tanks, water is obtained from wells. Most of these wells are located on the outskirts of the town around the base of Ancón, a hill near the city. No precautions are taken to prevent surface water from running into these wells, and most of them are so located that storm water does enter. All sorts of pails and cans are let down into the wells by anyone who comes along, and the overflow from buckets runs off the covers on which people stand back into the well.

The carts that deliver the water to the citizens are licensed, and are cleaned once each month with a chloride of lime solution. Many wells are also located within the city limits, and are surrounded with houses in which live some of the most ignorant and uncleanly people of the town.

There are several cisterns under the streets that receive water from the roofs of adjacent buildings. The iron covers of these cisterns do not fit closely and admit dust and storm water from the streets.

During the dry season water sells for 1 cent gold per gallon, so that poor people are extremely economical in its use, and baths become a luxury that only the wealthy can afford. Notwithstanding the very unsatisfactory and dangerous source of water there are records of only a very few cases of typhoid fever.

ICE FACTORY.

This plant is located outside the city limits, about 1 mile from the new Panama Railroad station. Water for making ice is obtained from wells which are located in a depression and undoubtedly receive surface water in wet weather. The subsoil is of a whitish clay under a thick stratum of rich earth. The manufacturers claim to distil and then filter (?) the water before it is made into ice. However, ice delivered in the city leaves considerable mechanical impurities after melting in a vessel. The ice machine is very old and is broken down about one-half the time.

ABATTOIRS.

These are two in number, one for the slaughter of hogs and one for beeves and sheep. The buildings are well constructed, with concrete floors, iron openwork inclosures, and corrugated iron roof. The floors are well graded to a central efferent, which discharges upon the beach above low water. At high tide a number of barrels are filled with water, with which to flush down the floors after a killing. These slaughterhouses are within the city limits, but appear to be obnoxious only to the near residents. No expert inspection of meat is made and carcasses are hauled through the town at night exposed to the dust of the streets.

CREMATORIUM.

The building is located on the outskirts of the city near the beach. The furnace is of the Engle type, and has a capacity of burning 10 tons of garbage daily. It has been in use about ten years. All garbage is collected together, kitchen refuse and dry trash, and all burned in the furnace. The daily amount of garbage collected is 39 cubic yards.

Seventy-eight cords of wood are burned daily, making the cost of cremation 50 cents per cubic yard. The ashes from the burning are not picked over, although much metal could be recovered from the cans melted.

CITY MARKET.

The city market is a large building on the water front where the servants go to purchase vegetables, meats, fish, fruits, etc., for their employers. Ninety per cent of the vendors are Chinamen, who are allowed to sell anything the people will buy. The fresh products are brought to Panama by many small vessels, which come from up and down the coast for a distance of 100 miles each way. These boats are not inspected, and come and go at will, bringing natives from the country or taking others away without restriction. Many of the porters and boatmen around the market have no permanent homes, but sleep aboard vessels, on the streets or at some house in the neighborhood.

This market place is admirably adapted to spread contagious disease from Panama to the adjacent regions or vice versa.

HOSPITALS.

The French Canal Company Hospital occupies about 45 acres of land on Ancón Hill, the north and east slope having been graded for that purpose by the canal company at great cost. The hospital is built upon the pavilion plan and the buildings are well separated from each other.

Beautiful walks and driveways, bordered with tropical trees and plants, render it a delightful place after leaving the narrow and dirty streets of Panama. All the buildings are of wood and in bad repair, having been standing since the early eighties. However, most of them are serviceable in their present condition. The ward buildings are large, well ventilated, and kept clean. There are no sewers, the pail system being in use. These are emptied every few days.

The total capacity of the hospital is 700 patients. One section is set aside for foreigners who require treatment and for American citizens, the United States Government paying \$500 a year, gold, for the right to send any American in Panama to this hospital. There is a resident physician in the canal section and a local physician visits the foreign wards. Sisters of Charity do the nursing. At present there are 24 patients in the foreign section and 20 in the canal section. All patients are provided with mosquito nets in this institution, but in no other in Panama.

SAN TOMAS HOSPITAL.

This is the city hospital, supported by the Government, by the Panama lottery, and by charity. All the soldiers, policemen, firemen, charity patients, and a few pay patients are sent here. There is one large brick and stone one-story building in which are the quarters of the Sisters of Charity and two wards, one for policemen and another for general cases. There are five other large frame buildings used for wards.

In the inner court there is a building equipped as an operating room and a building reserved for Panama Railroad employees. The total capacity of the hospital is about 350. The average number of patients is 90 to 100. Patients are grouped according to social standing, without regard to the disease. Two policemen, one with yellow fever and the other with a broken leg, would be put alongside each other.

No mosquito bars are ever used in this hospital. During January, 1904, 3 deaths from yellow fever occurred in a general ward of this place, where 30 other patients were exposed to the infection.

BOLIVAR ASYLUM.

This is a charitable institution where the homeless are provided with food and shelter. There are at present 80 being taken care of by the good people who support the place. The buildings are located on the beach near the abattoirs, are old and dilapidated, and thoroughly dirty.

In the men's quarters there is a wide wooden framework in the middle of the room upon which two rows of men sleep, one on each side, with their heads together in the center. The women's quarters have beds, but are crowded and poorly ventilated.

The latrines are very foul, and no provision is made for bathing. Mosquito bars are unheard of, although there are cisterns, wells, and other collections of water in the patio in which mosquitoes breed. There is an old unused gas tank in the yard of this asylum 50 feet in diameter and 15 feet deep that contains some water all the time. Buzzards roost on the trestle around the tank, and several dead vultures can be seen in the reservoir at any time. The tank is absolutely useless and has been for several years a filthy, foul-smelling nuisance. The effect this well-intentioned institution has upon public health can not be accurately determined, but persons come and go at will, no restrictions being placed upon the inmates, either to enter or leave. Apparently it could well be regarded as a center for distribution of all communicable diseases, as a number of the beneficiaries sleep in the place and beg upon the streets daytimes.

NEIGHBORING SETTLEMENTS.

La Boca, about 2 miles from the city of Panama, and connected thereto by railroad and carriage road, is the loading point for cargo and passenger steamers, the Panama Railroad wharf being located there.

This is the site of the mouth of the proposed canal, and also the mouth of a small river. The settlement has a population of about 500, the majority being negro laborers, stevedores, and railroad employees.

There are no sanitary regulations or precautions in force. There are no sewers. The water supply is similar to that of Panama. Malaria is always present in all its forms, usually becoming malignant in type.

TABOGA.

This is a large island in Panama Bay, about 14 miles from Panama. A village of 350 inhabitants is located on the island. The water supply is from wells and fresh-water streams, and is considered of good quality. Tuberculosis is very prevalent in the village, and about 15 lepers reside there. The French canal company has a large sanitarium on the island, not now in use.

NAOS OR FLAMINGO KEY.

This small island, 2 miles from La Boca, was formerly a station of the Pacific Mail Steamship Company, the cargoes being discharged upon lighters. Now all this is done at the La Boca wharf, and Naos has only the repair shop, storehouse, and laundry at present. The population is only about 35, all being employees of the Pacific Mail Company.

THE RAILROAD LINE TO COLON.

From Panama to Colon, a distance of 47 miles along the railroad, there are many villages, in fact almost a continuous settlement the entire distance, the total estimated population being 15,000 at present. This population is almost entirely Negro and Chinese. All the villages are filthy, without sanitary regulations or restrictions, without sewers, and having the usual water supply of the country, viz, rain water during the wet season and water from wells or streams during the dry season. No attention is paid to the wholesomeness of the source of water supply.

Mosquitoes are prevalent in all these villages, breeding in the rain-water barrels, in the swamps along the streams, and in ponds. Malaria, leprosy, elephantiasis, and beriberi are always to be found, and yellow fever and smallpox will occur when favorable clinical material presents itself, unless the proper precautions are taken.

QUARANTINE.

At the present time the passenger steamers both from the north and south are inspected prior to entry into Panama by a port physician.

There is no quarantine station or equipment except one autoclave and a small steam sterilizer that has never been used. A vessel was fitted up at one time for the detention of passengers from the Chilean ports at which plague prevailed. The port doctor is taken aboard the vessel with the customs officer by the tender of the Pacific Mail Company or the Pacific Steam Navigation Company, as the case may be. If a case of quarantinable disease was found, I am unable to state what would be the treatment of the case or of the vessel on which it was found.

There are several islands in Panama Bay, upon one of which a station could well be established.

Panama is the gateway from the whole world to the west coast of America, from San Francisco to Valparaiso. Passengers and freight from the Orient are transshipped at San Francisco for points in South America and again changed at Panama. Passengers and freight from all parts of Europe are brought to Colon by the Royal Mail from England, the French Line from Havre, or the Spanish Line from the Mediterranean, pass across the Isthmus to Panama, and from here take steamers to Central America and Mexican ports or to San Francisco. All going to any port on the west coast of South America also pass through Panama.

Many through passengers from New York to San Francisco or vice versa likewise pass through this port. This large through passenger traffic renders Panama one of the most important ports in the world from a quarantine standpoint, on account of its tropical location and of passengers being frequently forced to wait for steamer connections.

With a good and abundant water supply and proper sanitation of the city and an efficient quarantine the health of Panama could be made to compare favorably with the health of coast cities in the Southern States and the port would no longer be an endemic focus for the distribution of quarantinable diseases.

Summary of work in Chinatown, San Francisco, for the week ended February 13, 1904.

The following is received from Passed Assistant Surgeon Blue, under date of February 15:

Buildings reinspected	234
Rooms	1,776
Persons inspected	2,482
Sick	51
Sick prescribed for at Oriental Dispensary	10
Dead examined	11
Necropsies	8
Provisional diagnosis plague	2
Rats examined bacteriologically	52
Number showing pest infection	1
Places limed and disinfected	795
Times streets swept	3
Sewers flushed	16
Notices served to abate plumbing nuisances	33
Plumbing nuisances abated	7
Undergoing abatement	19
Total number of plumbing inspections	189

Plague case number 114 bacteriologically confirmed.

SAN FRANCISCO, CAL., February 17, 1904.

WYMAN, Washington:

Case 114, Katie Cuka, reported February 7, is bacteriologically confirmed. Girl convalescent.

BLUE.

Resolutions relative to cooperative work in the sanitation of Chinatown.

SAN FRANCISCO, CAL., February 8, 1904.

SIR: I have the honor to transmit herewith a copy of the resolutions adopted at a conference of the Federal, State, and city health authorities with members of the finance committee of the board of supervisors and representatives of the mercantile organizations, held in the offices